What is claimed is:

1. An objective lens for an optical pick-up that converges light beams of at least two different wavelengths onto recording layers of optical discs of at least two different recording densities, respectively, said objective lens comprising:

a refractive lens whose at least one surface is divided into a common area through which a light beam of a low NA, which is necessary and sufficient for an optical disc having low recording density, passes and a high NA exclusive area through which a light beam of a high NA, which is necessary only for an optical disc having high recording density, passes,

wherein a diffractive lens structure having a plurality of concentric ring areas with minute steps at the boundaries therebetween is formed in at least said high NA exclusive area, said diffractive lens structure formed in said high NA exclusive area is designed to maximize the diffraction efficiency of second or higher diffraction light at the wavelength corresponding to said optical disc having high recording density.

2. The objective lens according to claim 1, wherein a diffractive lens structure having a plurality of concentric ring areas with minute steps at the boundaries therebetween is formed in said common area, and said diffractive lens structure formed in said common area maximizes the diffraction efficiency of the

same order for said light beams of said at least two wavelengths.

3. The objective lens according to claim 1, wherein the diffraction order where the diffraction efficiency of the diffractive lens structure formed in said high NA exclusive area is maximized is larger than the diffraction order where the diffraction efficiency of said diffractive lens structure formed in said common area is maximized at the wavelength corresponding to said optical disc having high recording density.

4. The objective lens according to claim 3, wherein said diffractive lens structure formed in said common area maximizes the diffraction efficiency of the first order diffracted light.

5. The objective lens according to claim 1, wherein said common area is formed as a continuous surface without having a diffractive lens structure.

6. The objective lens according to claim 1, wherein the blaze wavelength of said diffractive lens structure formed in said high NA exclusive area is shorter than the wavelength of the light beam corresponding to said optical disc having high recording density.

7. An objective lens for an optical pick-up that converges

light beams of at least two different wavelengths onto recording layers of optical discs of at least two different recording densities, respectively, said objective lens comprising:

a refractive lens whose at least one surface is divided into a common area through which a light beam of a low NA, which is necessary and sufficient for an optical disc having low recording density, passes and a high NA exclusive area through which a light beam of a high NA, which is necessary only for an optical disc having high recording density, passes,

wherein a diffractive lens structure having a plurality of concentric ring areas with minute steps at the boundaries therebetween is formed in said high NA exclusive area, said diffractive lens structure formed in said high NA exclusive area is designed such that the diffraction order where the diffraction efficiency is maximized at the wavelength corresponding to said optical disc having high recording density is different from the diffraction order where the diffraction efficiency is maximized at the wavelength corresponding to said optical disc having low recording density.

8. The objective lens according to claim 7, wherein the diffraction order where the diffraction efficiency is maximized at the wavelength corresponding to said optical disc having high recording density is higher than the diffraction order where the diffraction efficiency is maximized at the wavelength

corresponding to said optical disc having low recording density.

9. The objective lens according to claim 8, wherein the diffraction order where the diffraction efficiency is maximized at the wavelength corresponding to said optical disc having high recording density is third order and the diffraction order where the diffraction efficiency is maximized at the wavelength corresponding to said optical disc having low recording density is second order.

10. The objective lens according to claim 7, wherein a diffractive lens structure having a plurality of concentric ring areas with minute steps at the boundaries therebetween is formed in said common area, said diffractive lens structure formed in said common area maximizes the diffraction efficiency of the same order for said light beams of said at least two wavelengths.

11. The objective lens according to claim 7, wherein said common area is formed as a continuous surface without having a diffractive lens structure.